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AUTHOR Wall, Janet
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ABSTRACT

In September 1977 a reading and language arts test, based upon 40 objectives slated for student accomplishment by the end of grade four, was administered to all Delaware fourth graders. This test, the Objective-Referenced Measure in Communications, was intended to provide entry level diagnostic information to classroom teachers and to inform administrators about the status of schools and districts on curriculum objectives. To justify, describe, and explain the test, separate manuals for curriculum analysis and instructional planning were developed and provided. Leadership services and products were offered in support of program improvement to encourage use of test results. Services included technical field assistance, information retrieval, state facilitators, and mini-grant programs. Products included a Textbook to Objective Correlation, Communications Activity Packs, and an Item Bank. The 160 items in the test were grouped into eight categories: study skills, literature, writing, listening, word recognition, reading-literal comprehension, reading-interpretive comprehension, and reading-critical comprehension. Percentage of students answering items correctly within each category ranged from 78% for reading-interpretive comprehensive, to 64% for reading-critical comprehesion. Results were analyzed by classroom, objective, category, total test, and item response by objective. The Delaware Educational Accountability System provided a framework for this testing program. (Author/CP)

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STATE OF DELAWARE

DEPARTMENT OF PUBLIC INSTRUCTION

DOVER, DELAWARE 19901

THE OBJECTIVE-REFERENCED TESTING COMPONENT OF THE DELAWARE EDUCATIONAL ACCOUNTABILITY SYSTEM

GRADE FOUR - COMMUNICATIONS

By JANET WALL
State Specialist, Evaluation

THE DELAWARE DEPARTMENT OF PUBLIC INSTRUCTION

KENNETH C. MADDEN, *State Superintendent*

HOWARD E. ROW, *Assistant State Superintendent*
Auxiliary Services

WILMER E. WISE, *State Director*
Planning, Research, and Evaluation Division

March 1978

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EXECUTIVE SUMMARY

In September of 1977, the grade four students in Delaware were tested in the content area of Communications (reading and language arts). The 160 item test, using 40 of the statewide educational objectives as the framework, was developed for the dual purpose of

* providing entry level diagnostic information to classroom teachers in order to help them deliver appropriate instructional services to students based upon specific individual needs

and

* informing administrators about the status of schools and districts on curriculum objectives in order to help them improve programs in reading and language arts.

Tests results were returned to school districts along with a variety of support products developed to facilitate the use of the test results for instructional and curricular improvements. Among the products developed and disseminated to appropriate groups were:

* *The Curriculum Analysis Interpretation Manual* - a document assisting educators in the identification of curricular strengths and weaknesses based on the examination of test data;

* *The Curriculum Instructional Planning Interpretation Manual* - a set of suggested procedures to be utilized by classroom teachers enabling them to identify student and objective specific needs;

* *Textbook to Objective Correlation* - a listing in matrix form providing page numbers in 12 reading and language arts textbooks addressing the statewide communication objectives;

* *Communications Activity Packs* - a series of 7 packets of over 500

classroom instructional activities and games in the areas of Literature, Listening, Reading Comprehension, Word Recognition, Speaking, Study Skills and Writing related to the statewide communications objectives; and

* *Item Bank* - a compilation of over 100 test items coded to the reading and language arts objectives used for checking the progress of students on those objectives.

Leadership services and financial incentives were also offered to Delaware educators to supplement and stimulate educational improvement efforts at the local level. These state level services included:

* *Technical Assistance from the Planning, Research, and Evaluation Division* - training of administrators and teachers in computer report interpretation and use of test data for initiating program changes;

* *Curriculum Assistance from the Instructional Division* - the delivery of support services and training geared toward the improvement of educational programs and teaching techniques;

* *Information Search and Retrieval Unit* - the provision of research findings and journal articles offering suggestions for program change and improvement;

* *Field Agent Assistance Program* - the on-site services of a person aiding school personnel in the solution of an educational problem;

* *State Facilitator Program* - the provision to local educators of over 200 programs shown to be effective in improving programs and alleviating needs;

* *Mini Grant Program* - a mechanism for providing funds to school districts for the use and further dissemination of test data to appropriate staff.

Results obtained by Delaware grade four students on the test highlighted areas of strength and weakness in the various categories tested. For example, students performed best on those items testing their proficiency in interpretive comprehension, literal comprehension, word recognition, writing, and literature. Delaware students performed less well on items relating to the areas of study skills, listening and critical comprehension.

Best performance was obtained on the following specific objectives:

- Use capital letters to begin proper nouns
- Recognize certain sight vocabulary words
- Recognize and identify cause and effect relationships
- Use appropriate reference material to find information
- Make inferences after reading a selection
- Determine pronouns based on case, number and gender
- Recognize feelings and motives of characters
- Utilize alphabetizing skills
- Supply a missing homonym by utilizing context clues
- Identify compound words
- Draw conclusions from a selection
- Use capitalization of the pronoun I, etc.
- Recognize and eliminate unnecessary repetitions
- Using context clues in word identification
- Predict possible outcomes of a selection
- Use context clues to select the correct meaning of a word.

Delaware students showed poorest performance on these objectives:

- Follow printed directions
- Interpret symbols on maps, charts, graphs, etc.
- Utilize dictionary skills
- Phonic analysis -- vowels
- Understand the organization of a newspaper
- Combine two related thoughts into one sentence
- Use appropriate spelling
- Identify the root word with prefix or suffix.

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INTRODUCTION

In September of 1977, an extensive test in the area of Communications Skills (reading and language arts) was administered to grade 4 students in Delaware schools. The test was based upon 40 objectives slated for student accomplishment by the end of grade four. The instrument was administered at the beginning of the fourth grade instruction year for the dual purpose of

* providing entry level diagnostic information to classroom teachers in order to help them deliver appropriate instructional services to students based upon specific individual needs

and

* informing administrators about the status of schools and districts on curriculum objectives in order to help them improve programs in reading and language arts.

This report will provide information in two parts on the grade four component of the Delaware Educational Assessment Program. Part I will describe the support products and services available to local districts to encourage the use of the test data for program improvement. Part II will describe the statewide results on the test and identify Delaware strengths and weaknesses in reading and language arts.

PART I

STATE SUPPORT SYSTEM FOR EDUCATIONAL IMPROVEMENT

STATE SUPPORT SYSTEM FOR EDUCATIONAL IMPROVEMENT

The grade four testing program was developed to support and implement a problem-solving educational improvement model called the Delaware Educational Accountability System (DEAS). In its simplest form the DEAS has four major components. These are

* Setting educational goals and objectives
* Determining curriculum and student status on objectives
* Identifying areas of needed improvement for the curriculum and the students
* Improving programs to meet the identified areas of weakness or need.

The problem solving model had utility for teachers, principals and district level administrators wishing to objectively analyze programs and implement needed improvements. In order to assist local districts in program improvement efforts, the Delaware Department of Public Instruction provided leadership, products and services to districts during each of the four steps in the DEAS model. The contributions made by state level staff at each of the four steps will be outlined in the following narrative.

DEAS COMPONENT #1
SETTING GOALS AND OBJECTIVES

The Delaware State Board of Education approved a list of nine goal statements toward which education in Delaware should focus during the 1970's and 1980's.(1) One goal area related to basic skills and stated that

> Education in Delaware will provide the opportunity for each learner, to the extent of his individual ability, to acquire a mastery of basic skills required for obtaining and expressing ideas through the effective use of words, numbers and symbols.

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(1) Goal Statements for Delaware Public School Students for the 70's and 80's, approved by the State Board of Education, June 1972.

In order to help Delaware administrators and teachers focus on this goal, a series of objectives was developed for student accomplishment by the end of grades 1, 4 and 8.[2] These objectives were developed in the content areas of communications (reading and language arts), mathematics, science, and social studies. Sets of objectives have been disseminated to Delaware schools and school districts and subsequently were adopted or adapted by all Delaware school districts as part of the local curricula.

The statewide objectives provided the framework for the Delaware Educational Assessment Program (DEAP). For the grade four testing program 40 of the statewide reading and language arts objectives were selected by DEAP task force members for the purpose of student and curriculum assessment through the statewide testing program.

DEAS COMPONENT #2
DETERMINING CURRICULUM AND STUDENT STATUS ON OBJECTIVES

In order to help schools and districts determine the status of their curriculum, two major products were prepared as part of the Delaware Educational Accountability System. These products were

* The Objective Referenced Measure in Communications[3]

and

* The computer printouts at the classroom, school and district levels.

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(2) Statewide Educational Objectives, Coordinated by Planning, Research, and Evaluation Division Staff, January 1975.

(3) Delaware Objective-Referenced Measure, Grade Four Communications, Form ZDW, Department of Public Instruction, Fall 1977.

The Objective-Referenced Measure in Communications

The objective-referenced test was developed by the Planning, Research, and Evaluation Division of the Delaware Department of Public Instruction with the cooperation and assistance of National Evaluation Systems of Amherst, Massachusetts and selected administrators, teachers and reading experts from Delaware. The test was based upon 40 of the statewide reading and language arts objectives. Three to six items were coded to each of the objectives resulting in a test of 160 items. Administration of the test took place during the week of September 26-30, 1977.

Computer Printouts from the Test

Five types of computer reports were generated from the test results. An example of each report is provided in Appendix A. The available reports included

* *The Classroom Roster* - This printout was provided to each grade four teacher participating in the testing program. The computer report listed the coding and maximum score for each of the 40 objectives, each strand and the total test. The bulk of the report listed the students' names and the number of items that each student answered correctly on each objective, each strand (category), and on the total test. The report provided the potential for the classroom teacher to 1) identify which students have mastered or not mastered selected skills and 2) provide appropriate instruction to those students based upon their unique needs.

* *Distribution of Pupil Scores by Objective Report* - This report was provided for each tested classroom, school and district and for the state as a whole. The Distribution of Pupil Scores by Objective Report listed the objective coding, the maximum score (number of test items) attainable for each objective, and the

number of students obtaining the maximum score through the number of students answering zero items correct on a particular objective. Specifically, if an objective was measured by three items, the number of students at the classroom, school and district levels obtaining three correct, two correct, one correct and zero correct was listed. Information of this nature was supplied for each of the forty objectives tested.

* *The Distribution of Pupil Scores by Strand Report* - This computer print-out furnished a similar distribution to the report just described but for student scores on the strand or category level. For example, Strand C - Writing was measured by 34 items. This report listed the number of students obtaining all 34 items correct, 33 correct, 32 correct, 31 correct, ... 1 correct and 0 correct.

* *The Distribution of Pupil Scores on the Total Test Report* - This report supplied the number of students obtaining each possible score on the total test. Each test score is translated into a percent correct to facilitate test score interpretation. This report was generated at the classroom, school, district, and state levels.

* *The Item Response by Objective Report* - This report gave a listing of the objectives grouped by strand that were assessed on the communications test. The first column of the report listed the item numbers in the test used to assess each objective. In the second column the correct answer A, B, C, D is printed. The next column provides the percent of students selecting each of the possible answers. In addition to this, the average percent correct for each objective and for the strand as a whole is listed. This report was produced at the classroom, school, district and state levels.

DEAS COMPONENT #3
IDENTIFY AREAS OF NEEDED IMPROVEMENT
FOR STUDENTS AND THE CURRICULUM

Two support products were developed as part of this DEAS component in order to help teachers and administrators utilize the test results for needs identification within the curriculum. These were

* The Curriculum Analysis Interpretation Manual(4)
* The Classroom Instructional Planning Interpretation Manual(5)

Curriculum Analysis Interpretation Manual

This manual was developed for the purpose of assisting curriculum committees, district level content supervisors, supervisors of elementary education, and/or principals in the examination of the grade four test results. Processes outlined within this manual helped administrators locate areas of strength, satisfactory performance and curricular need for the purpose of analyzing program effectiveness in the schools.

Classroom Instructional Planning Interpretation Manual

This manual was developed specifically to help the grade four teachers in Delaware examine the test results of their students, identify those students in need of initial instruction or remediation, and gear instruction to those skills most needed by students. The procedures outlined in the manual furnished the opportunity for a teacher to deliver instruction in a more efficient and effective manner during instructional program offered in grade four.

Each of the two manuals presented a rationale for objective-referenced

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(4) Curriculum Analysis Interpretation Manual, Objective Referenced Measure in Communications for Delaware Grade Four Students, Delaware Department of Public Instruction.

(5) Classroom Instructional Planning Interpretation Manual, Objective Referenced Measure in Communications for Delaware Grade Four Students, Delaware Department of Public Instruction.

testing, a description of the test and an explanation of the computer printouts. The applicable manuals were disseminated to school and district administrators as well as all grade four teachers in Delaware.

DEAS COMPONENT #4
IMPROVING PROGRAMS TO MEET IDENTIFIED AREAS OF WEAKNESS OR NEED

A number of leadership services, products, and financial incentives were made available to Delaware schools and districts so that local educators could improve their programs in reading and language arts. These program improvement supports were developed and provided to encourage the use of the grade four test results. Among the many products and services available were

* Technical Assistance from the Planning, Research, and Evaluation Division
* Curriculum Assistance from the Instructional Division
* The Information Search & Retrieval Unit
* Field Agent Assistance Program
* State Facilitator Program
* DEAS Mini Grant Program
* The Textbook to Objective Correlation(6)
* Communications Activity Packs(7) and
* The Item Bank.(8)

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(6) Textbook to Objective Correlation in Communications, Planning, Research, and Evaluation Division, Delaware Department of Public Instruction.

(7) Communications Activity Pack (Literature, Listening, Reading-Comprehension, Reading-Word Recognition, Speaking, Study Skills, Writing), Delaware Educational Accountability System, Compiled By Information Search and Retrieval Unit, Planning, Research, and Evaluation Division, Delaware Department of Public Instruction.

(8) Item Bank, Delaware Educational Accountability System, Planning, Research, and Evaluation Division, Delaware Department of Public Instruction.

Technical Assistance

Selected members of the Planning, Research, and Evaluation Division contributed significant staff time to the provision of teacher workshops, explanations of computer printouts, and data interpretation to educators in local districts. This assistance extended the use of the grade four test data in fulfilling the intended uses for both teachers and administrators.

Curriculum Assistance

Members of the Instruction Division aided districts in implementing curriculum changes and improving teaching techniques related to the grade four communications objectives assessed with the objective-referenced test. These staff members also organized and provided inservice programs to improve teacher skills and helped educators become better trained to perform their responsibilities.

Information Search and Retrieval Unit (ISRU)

Through a grant from the National Institute of Education (NIE), the Delaware Department of Public Instruction's Planning, Research, and Evaluation Division provided educators with current research, curriculum materials and journal articles by accessing a coordinated and comprehensive resource base for the purpose of solving educational problems. ISRU staff members made this service available free of charge to educators who wished to improve reading and language arts offerings in support of the communications test results at grade four.

Field Agent Assistance

The on-site assistance by a field agent to local educators in the solution of an educational problem was an additional service provided by the Planning, Research, and Evaluation Division through funds from NIE. The field agent helped districts identify a problem; locate potential solutions; select, implement, and then evaluate the best solution. This service was offered to support program improvement efforts as a result of detecting weaknesses highlighted by the grade four communications test. Problems faced by school districts in other areas were also tackled by the field agent.

State Facilitator Program

As a result of a grant from the U. S. Office of Education, the Planning, Research, and Evaluation Division made Delaware schools aware of over 200 projects shown to be effective in improving the quality of education. About 65 of these projects were related to the basic skills. Those schools identifying a need in the area of communications tapped the services of the state facilitator. The facilitator helped interested educators select one of the available projects to meet their needs, provided technical assistance and staff training for implementing the project, and furnished limited financial assistance to help schools adopt the selected project.

DEAS Mini Grant Program

For the past several years the Planning, Research, and Evaluation Division has supplied small grants to districts to be used for the analysis of test data gathered from the Delaware Educational Assessment Program. In many cases these grants offered the only opportunity for districts to avail teachers of released time for the study and utilization of test results. This year, mini grant funds have been used primarily to further the use of the grade four test results and in revamping or modifying the reading and language arts curricula in districts.

The Textbook to Objective Correlation

In cooperation with the Diamond State Reading Association, the Planning, Research, and Evaluation Division developed a product that supplied the page numbers in 12 reading and language arts textbooks where the statewide communications objectives were treated in some form. Through the utilization of this document teachers and administrators located pages in their own textbook and 11 others where initial, remedial and enrichment instructional activities could be found.

When an individual or group related skill deficiency was identified by teachers, the teacher referred to this product and located appropriate suggestions for instruction. A copy of this document was disseminated to each grade four teacher and applicable administrator.

Communications Activity Packs

Seven packets of classroom activities were developed for grade four teachers. Contained within these packets were about 500 activities, games and instructional techniques for teaching communication skills to elementary students. Activity packs were developed in the areas of 1) writing, 2) listening, 3) literature, 4) reading word recognition, 5) reading comprehension, 6) study skills, and 7) speaking. The activities within these packets related to the 40 objectives assessed by the communication test administered in September. These products were distributed to teachers upon request.

Item Bank

A compilation of over 100 test items was prepared and disseminated to teachers. These items were coded to the 40 objectives forming the framework of the objective-referenced test in communications. The teachers used these items to verify the proficiency of students after instruction on those objectives not mastered at the beginning of grade four.

PART II

STATE LEVEL RESULTS IN COMMUNICATIONS

STATE LEVEL RESULTS IN COMMUNICATIONS

The 160 test items comprising the assessment instrument were grouped into eight categories or strands. Each of these strands contained several objectives important for student accomplishment by the end of grade four. State level results will be described in the following narrative according to each of these eight categories.

Results obtained by Delaware grade four students on the specific 40 objectives tested are presented in Appendix B. The results are rank ordered by average percent correct.

Strand A - Study Skills

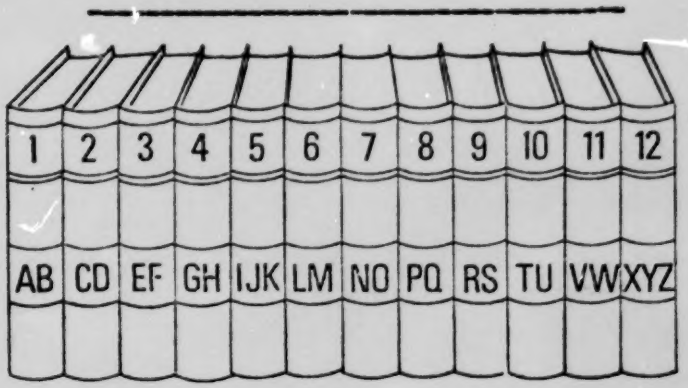
The study skills category contains items which measured the ability of students to

* utilize alphabetizing skills
* utilize dictionary skills
* follow printed directions
* recognize and use parts of a book
* use appropriate reference material
* interpret symbols on maps and charts
* understand the organization of a newspaper.

An average of 65 percent of the grade four students were able to answer items correctly within this skills grouping. Compared to other categories assessed, grade four students performed less well on these skills.

Students tended to perform best on items requiring knowledge of the appropriate usage of reference material, and alphabetizing skills. Poorest performance within this category was obtained by students in understanding the organization of a newspaper.

Student performance within this category may be typified by the results on the following items.



89. Which book would contain information about Delaware?

		Percent of Delaware students selecting each alternative
* A.	Book 2	88
B.	Book 5	6
C.	Book 7	3
D.	Book 10	3
	Not Responding	1

---

93. Read the sentence below. Then use this sample dictionary page to answer the question that follows.

bu·reau \'byur-ˌō\ n.; pl. bu·reaus or bu·reaux \-ˌōz\. 1 A chest of drawers for a bedroom, usually low and with a mirror. 2 A business office of various kinds. 3 A government department; as, the Weather Bureau.

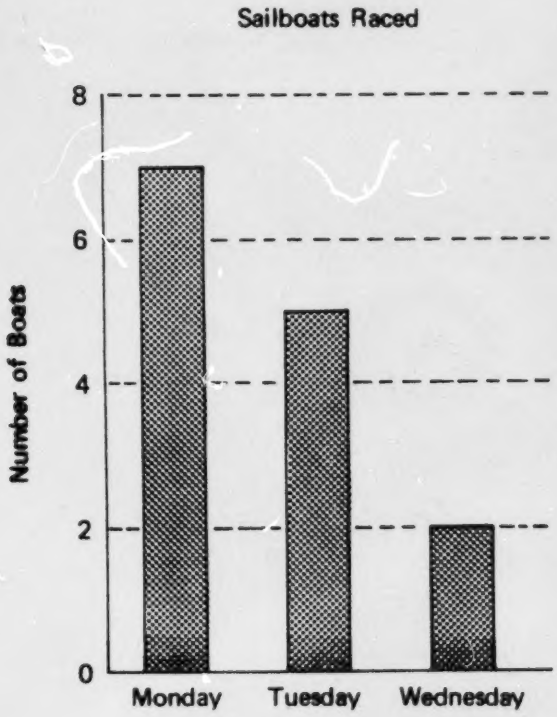
bureau, 1

Mr. Tull picked up his plane tickets at the travel bureau.

What is the meaning of bureau?

		Percent of Delaware students selecting each alternative
A.	bedroom	12
* B.	office	42
C.	chest of drawers	36
D.	mirror	9
	Not responding	1

40. Use the chart to answer the next question.



How many boats raced on Tuesday?

	Percent of Delaware students selecting each alternative
A. 2	12
B. 4	10
C. 4 1/2	55
* D. 5	18
Not Responding	6

Strand B - Literature

Skills tested in this strand checked student achievement in

* knowing selected literary elements

* understanding the use and choice of language in literature.

In comparison to other strands, students performed in an average manner with 67 percent of the students correctly answering the items in this category.

Best performance was obtained by students on identifying literary elements including tracing the plot and setting of a story. Students performed poorest on items relating to the use and choice of language in literature including identifying the meanings of figurative words and phrases and sensory words.

The performance of Delaware students on representative items in this category included the following example items.

---

153. Read the story below.

> Janet and Bob go to camp in the summer. The camp is in the mountains where there are lot of trees. The campers swim and fish in a lake. The air is clear and fresh. Janet and Bob are lucky to go to this camp.

What does the writer of this story think about going to this camp?

		Percent of Delaware students selecting each alternative
* A.	It is a good idea.	74
B.	It is a mistake.	7
C.	It is a sad summer.	9
D.	It is a job.	7
No	Responding	3

---

159. Read the sentence below.

Mark looked as white as a sheet.

Which answer is another way of saying as white as a sheet?

		Percent of Delaware students selecting each alternative
A.	sunburned	9
B.	very unhappy	15
C.	like a bed	17
* D.	very scared	55
Not Responding		3

Strand C - Writing

Student performances assessed by the objective-referenced test in the area of writing skills include

* capitalization of proper nouns
* proper punctuation
* spelling
* using appropriate grammar
* subject-predicate agreement
* proper use of pronouns
* appropriate sentence development.

Approximately 68 percent of the grade four students correctly answered the items relating to these skills. Compared to other categories tested Delaware grade four students performed in an above average manner on those test items necessary for the proper development of writing skills.

Best performance by students was obtained on the skills of capitalizing proper nouns and correct use of pronouns. Poorest performance in this category was shown on the skills of sentence construction and spelling.

Example items in this category include the following three items.

---

2. Which word should begin with a capital letter?

		Percent of Delaware students selecting each alternative
*	A. delaware	91
	B. feather	3
	C. campfire	3
	D. indeed	2
	Not Responding	1

---

15. In which group of words is there a spelling MISTAKE?

		Percent of Delaware students selecting each alternative
*	A. a peice of cake	42
	B. word of honor	26
	C. receive a gift	14
	D. point of interest	17
	Not Responding	1

---

20. Which of the following should be divided into two sentences?

		Percent of Delaware students selecting each alternative
	A. You can't add apples and oranges.	10
	B. Before we got on the train, we said goodbye.	30
	C. Tulips are very pretty flowers.	6
*	D. I called the police the police came.	53
	Not Responding	1

Strand D - Listening

Test items in this category measured student listening skills. Specific performances required by students included

* listening to and following a set of directions
* listening to information presented orally and answering questions on that information.

In comparison to other strands tested student performance was average. An average of 65 percent of the students correctly answered the items in this category. Best performance was obtained by students on answering factual questions about material presented orally. Poorest performance in this category resulted on the skill requiring students to follow orally presented directions.

Representative items within this category included the following.

Orally Presented by Examiner

Listen to these directions, then answer question 44.

Here are the directions to tell you how to do your homework paper. First, turn the paper sidewards so that the long side of the paper is at the top. Then write your name in the upper right corner. Last, write the date beneath your name.

44. Which paper looks like yours?

A.
Jim Jones
September 26, 1977

B.
Paul Smith
September 26, 1977

C.
Amy Green
September 26, 1977

D.
Julie Cohen
September 26, 1977

Percent of Delaware students selecting each alternative	
A.	17
B.	33
C.	24
* D.	25
Not Responding	1

Orally Presented by Examiner

Listen to this story, then answer question 55.

Benny the bluebird was very thirsty. He found some water in the bottom of a small glass but his beak was too short. He couldn't reach the water.

Benny went to his friend the owl. "What should I do?" asked Benny. The owl was very wise. He gave Benny a good idea.

Benny went back to the glass and started filling it with small pebbles. When it was almost full of rocks, the water came up to the top. Benny had a nice cool drink.

55. Who is Benny's friend?

		Percent of Delaware students selecting each alternative
A.	pebbles	4
B.	the bluebird	9
C.	robin	3
* D.	the owl	83
Not Responding		1

Strand E - Word Recognition

Competencies assessed within this category included

* identifying words in context
* recognizing and identifying certain vocabulary words when pronounced
* recognizing the proper sounds of consonants in words
* recognizing the proper sounds of vowels in words
* identifying compound words
* recognizing the meanings of words when new words are formed by changing endings.

Student performance appeared to be above average in this category when compared to other categories tested. On the whole, 68 percent of the students were able to correctly answer the items in this category.

Student performance was best in the area of sight vocabulary, compound words, and identifying the meanings of words in context. Poorest performance within this strand exhibited by students in the recognition and identification of root or base words.

The items below represent example item performances obtained by Delaware students in this category.

72. Which word has the same vowel sound as the word dull?

		Percent of Delaware students selecting each alternative
*	A. cut	24
	B. rule	31
	C. road	5
	D. doll	40
	Not Responding	1

---

76. Which one is a COMPOUND word?

		Percent of Delaware students selecting each alternative
	A. terrible	6
	B. whisper	5
*	C. toothbrush	82
	D. window	5
	Not Responding	2

---

81. Which word means A PERSON WHO SINGS?

		Percent of Delaware students selecting each alternative
	A. singing	8
	B. sings	8
	C. single	4
*	D. singer	79
	Not Responding	1

Strand F - Reading - Literal Comprehension

Items in this category measured students ability in reading information and recalling the meanings of words and ideas. Specific skills included

* identifying word meanings in context
* using the appropriate homonym in context
* answering factual questions about a reading passage
* recalling sequence of events in a story
* identifying the main idea in a reading passage.

Delaware grade four students performed well on the items in this category in comparison to other strands tested. An average of 71 percent of the students statewide were able to answer the items correctly.

Best performance was obtained by students in this category on usage of homonyms, and word meanings in context. Comparatively poorer performance was obtained on those items requiring students to identify the main idea of a story.

Statewide results on items representative of this category are presented below.

111. In the sentence below, which word should go in the blank?

Steve had _____ pieces of toast for breakfast.

	Percent of Delaware students selecting each alternative
* A. four	85
B. for	8
C. fore	5
Not Responding	2

---

117. Read the story below.

> Mike saw a red glow in the sky. He thought that Mr. Bond's barn must be on fire. Mike ran and jumped on his bicycle and raced down the road.

Why did Mike think the barn was on fire?

		Percent of Delaware students selecting each alternative
A.	The barn belonged to Mr. Bond	6
* B.	He saw a red glow in the sky.	77
C.	The road went to Mr. Bond's barn.	9
D.	He jumped on his bicycle.	5
Not Responding		3

---

126. Read the story below.

> Lots of people like to exercise. Some fathers jog around the neighborhood with their children. Many families ride bicycles or go swimming. Adults and children enjoy sports like golf or bowling.

What is the MAIN IDEA of this story?

		Percent of Delaware students selecting each alternative
A.	Families ride bicycles.	9
B.	Fathers like to jog.	9
C.	Children enjoy bowling.	9
* D.	People like to exercise.	69
Not Responding		5

Strand G - Reading - Interpretive Comprehension

Test items in this category assessed student's ability to understand and interpret the meanings of sentences and paragraphs they read. Specific skills included

* drawing conclusions
* identifying cause and effect relationships
* inferring the meaning of a selection
* making valid comparisons about information presented
* recognizing the feelings and motives of characters
* predicting outcomes of a situation presented in a reading passage.

Of all categories tested, Delaware grade four students performed best in the area of interpretive comprehension. An average of 78 percent of the students were able to correctly answer test items relating to this area of reading comprehension.

Best performance was exhibited by Delaware students in identifying cause and effect relationships and making inferences about a passage read. Comparatively, the poorest performance in this category resulted on items requiring students to make valid comparisons about material read.

Items which are representative of the skills required by students in this category of comprehension included the following items.

---

129. Read the story below

It had stopped raining. Jose' and Tomas decided to go outside to play in the puddles and sail their paper boats in the water. After a while they decided to jump over all the puddles. In front of Tomas' house was a big puddle that nobody had been able to jump over.

A few minutes later, Jose' and Tomas came into the house dripping wet!

Why were Jose' and Tomas wet?

		Percent of Delaware students selecting each alternative
* A.	They tried to jump the puddle.	80
B.	It was raining.	11
C.	They went swimming.	6
D.	They ran a race.	3
Not Responding		1

---

145. Read the sentence below.

The shadows looked like ghosts to Ronny as he ran home.

How did Ronny feel?

		Percent of Delaware students selecting each alternative
* A.	afraid	80
B.	bashful	7
C.	cool	7
D.	depressed	4
Not Responding		2

---

149. Read the story below. Then choose the event that probably happened.

"I'm always careful." Bonnie said. "I never bump into things, slip on the ice, or fall on the stairs." She stepped back to sit on the chair where Charlie had put his new hat. "Look out!" cried Al. It was too late.

What happened?

		Percent of Delaware students selecting each alternative
A.	Bonnie slipped on the ice.	11
* B.	Bonnie sat on Charlie's hat.	72
C.	Bonnie broke the chair.	10
D.	Bonnie sat on Charlie.	6
Not Responding		2

Strand H - Reading - Critical Comprehension

The skill assessed within the category of critical comprehension related to the ability of students to determine the difference between facts and opinions.

Of all categories tested students performed poorest on this skill. An average of 64 percent of the students correctly answered the items in this category.

Items which typify student achievement in this skill included the following.

---

85. Which sentence tells about something that is a TRUE FACT?

		Percent of Delaware students selecting each alternative
A.	Peas taste to eat.	9
* B.	Delaware is a state.	80
C.	Candy is good for you.	5
D.	It never rains in Delaware.	3
Not Responding		2

---

86. Which sentence gives an OPINION?

		Percent of Delaware students selecting each alternative
A.	Water is wet.	14
B.	The American flag is red, white, and blue.	34
* C.	Birds are pretty.	32
D.	An apple is a kind of fruit.	17
Not Responding		3

APPENDIX A

CLASSROOM ROSTER

DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
GRADE 4 COMMUNICATIONS 1977

DISTRICT - WAREDEL SCHOOL - EXCELLENT ELEM. SCHOOL CLASS - 1

NUMBER OF STUDENTS = 24

| | OBJECTIVE SCORES | | |

DISTRIBUTION OF PUPIL SCORES BY OBJECTIVE

DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
GRADE 4 COMMUNICATIONS 1977

DISTRICT - WAREDEL

NUMBER OF STUDENTS = 178

OBJECTIVE	NUMBER OF TEST ITEMS	FREQUENCY DISTRIBUTION OF SCORES							CUMULATIVE PERCENTAGE DISTRIBUTION OF SCORES							NUMBER OF TEST ITEMS	OBJECTIVE
		0	1	2	3	4	5	6	0	1	2	3	4	5	6		
A1	4	2	12	11	47	106			1	8	14	40	100			4	A1
A2	4	15	27	31	53	52			8	24	41	71	100			4	A2
A3	3	12	41	61	64				7	30	64	100				3	A3
A4	6		6	17	33	45	42	35		3	13	31	57	80	100	6	A4
A5	3	4	10	21	143				2	8	20	100				3	A5
A6	3	7	15	121	35				4	12	80	100				3	A6
A7	3	7	40	84	47				4	26	74	100				3	A7
B1	3	9	12	45	112				5	12	37	100				3	B1
B2	6	10	4	15	10	36	54	51	6	8	15	21	41	71	100	6	B2
C1	3	1	2	18	157				1	2	12	100				3	C1
C2	3	7	22	51	98				4	16	45	100				3	C2
C3	6		3	11	24	38	65	37		2	8	21	43	79	100	6	C3
C4	6	1	21	39	43	31	27	16	1	12	34	58	76	91	100	6	C4
C5	4		13	31	50	84				7	25	53	100			4	C5
C6	3	8	32	33	105				4	22	41	100				3	C6
C7	3	3	7	39	129				2	6	28	100				3	C7
C8	3	10	52	93	23				6	35	87	100				3	C8
C9	3	6	15	25	132				3	12	26	100				3	C9
D1	6	1	4	12	29	64	49	19	1	3	10	26	62	89	100	6	D1
D2	6	3	9	10	30	35	54	37	2	7	12	29	49	79	100	6	D2
E1	3	4	8	68	98				2	7	45	100				3	E1
E2	6	1	2	4	12	18	43	98	1	2	4	11	21	45	100	6	E2
E3	3	11	33	51	83				6	25	53	100				3	E3
E4	6	9	10	24	13	25	46	51	5	11	24	31	46	71	100	6	E4
E5	3	8	15	22	133				4	13	25	100				3	E5
E6	3	76	42	34	26				43	66	85	100				3	E6
E7	3	9	12	50	107				5	12	40	100				3	E7
F1	3	7	18	38	115				4	14	35	100				3	F1
F2	3	3	12	46	117				2	8	34	100				3	F2
F3	4	5	14	22	44	93			3	11	23	48	100			4	F3
F4	4	6	11	26	35	100			3	10	24	44	100			4	F4
F5	4	7	3	15	50	103			4	6	14	42	108			4	F5
F6	4	10	11	16	41	100			6	12	21	44	100			4	F6
G1	4	6	9	11	42	110			3	8	15	38	100			4	G1
G2	4	4	13	7	32	122			2	10	13	31	100			4	G2
G3	4	5	8	12	39	114			3	7	14	36	100			4	G3
G4	4	7	12	18	49	92			4	11	21	48	100			4	G4
G5	4	9	6	6	15	142			5	8	12	20	100			4	G5
G6	4	3	13	15	37	110			2	9	17	38	100			4	G6
H1	6	1	6	12	17	56	28	58	1	4	11	20	52	67	100	6	H1

DISTRICT OF PUPIL SCORES BY STRAND

DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
GRADE 4 COMMUNICATIONS 1977

DISTRICT - WAREDEL

NUMBER OF STUDENTS = 17

	FREQUENCY DISTRIBUTION OF SCORES								CUMULATIVE PERCENTAGE DISTRIBUTION OF SCORES								
STRAND	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H	STRAND
NUMBER OF TEST ITEMS	26	9	34	12	27	22	24	6	26	9	34	12	27	22	24	6	NUMBER OF TEST ITEMS
SCORE																	SCORE
34											100						34
33			6								97						33
32			5								94						32
31			12								87						31
30			22								75						30
29			14								67						29
28			12								60						28
27			12		6						53		97				27
26	4		19		12				98		43		90				26
25	5		12		12				95		36		83				25
24	18		9		11		42		85		31		77		76		24
23	16		9		25		40		76		26		63		54		23
22	14		10		20	27	25		68		20		52	85	40		22
21	17		7		15	31	11		58		16		43	67	34		21
20	13		6		9	23	15		51		13		38	54	25		20
19	13		4		11	27	8		44		11		32	39	21		19
18	15		2		8	9	9		35		10		28	34	18		18
17	15		4		6	12	4		27		7		24	28	16		17
16	15		2		8	12	4		19		6		20	21	13		16
15	5		5		10	9	2		16		3		14	16	12		15
14	3		1		4	4			14		3		12	13	12		14
13	7		3		3	2	3		10		1		10	12	11		13
12	2			5	7	5	2		9		1	97	6	10	10		12
11	3		1	17	4	3	3		7		1	88	4	8	8		11
10	5			42	1	2	1		4		1	64	3	7	7		10
9	3	43	1	32	3	3	2		3	76		46	2	5	6		9
8	1	42		25	1	1	3		2	52		32	1	4	4		8
7	1	40		23		3	2		2	30		19	1	3	3		7
6	3	17		15	1	2	1	58		20		11	1	2	3	67	6
5		10		6		1	1	28		15		7	1	1	2	52	5
4		10		7		1	3	56		9		3	1	1	1	20	4
3		2		5			1	17		8		1	1	1		11	3
2		7		1		1		12		4			1			4	2
1		3						6		2			1			1	1
0		4			1			1									0
STRAND	A	B	C	D	E	F	G	H	A	B	C	D	E	F	G	H	STRAND
NUMBER OF TEST ITEMS	26	9	34	12	27	22	24	6	26	9	34	12	27	22	24	6	NUMBER OF TEST ITEMS
AVERAGE VALUE =	18.8	6.8	25.4	8.3	20.0	17.9	20.2	4.5									
STANDARD DEVIATION =	4.5	2.2	5.1	2.2	4.9	4.2	5.0	1.4									

DISTRIBUTION OF PUPIL SCORES ON TOTAL TEST

DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
GRADE 4 COMMUNICATIONS 1977

DISTRICT - WAREDEL

NUMBER OF STUDENTS = 178

SCORE	PER COR	FREQ	CUM PER	SCORE	PER COR	FREQ	CUM PER	SCORE	PER COR	FREQ	CUM PER	SCORE	PER COR	FREQ	CUM PER
160	100		100	120	75	5	38	80	50		10	40	25		
159	99		100	119	74	3	35	79	49	2	10	39	24		
158	99	1	100	118	74	3	34	78	49	1	9	38	24		
157	98		99	117	73	3	32	77	48		8	37	23		
156	98	1	99	116	73	3	30	76	48	3	8	36	23		
155	97	1	99	115	72	2	29	75	47	1	7	35	22		
154	96		98	114	71	1	28	74	44		6	34	21		
153	96	2	98	113	71	5	27	73	46		6	33	21		
152	95	4	97	112	70	4	24	72	45	1	6	32	20		
151	94		95	111	69		22	71	44		6	31	19		
150	94	2	95	110	69	1	22	70	44		6	30	19		
149	93	2	94	109	68		21	69	43	2	6	29	18		
148	93	4	93	108	68	3	21	68	43	1	4	28	18		
147	92	3	90	107	67	1	20	67	42	2	4	27	17		
146	91		89	106	66	2	19	66	41		3	26	16		
145	91	7	89	105	66		18	65	41		3	25	16		
144	90	2	85	104	65		18	64	40		3	24	15		
143	89	3	84	103	64		18	63	39		3	23	14		
142	89	1	82	102	64		18	62	39		3	22	14		
141	88	7	81	101	63	2	18	61	38		3	21	13		
140	88	2	78	100	63		17	60	38		3	20	13		
139	87	4	76	99	62		17	59	37	1	3	19	12		
138	86	6	74	98	61		17	58	36	1	2	18	11		
137	86	4	71	97	61	2	17	57	36		2	17	11		
136	85	6	69	96	60	1	16	56	35		2	16	10		
135	84	8	65	95	59	1	15	55	34		2	15	9		
134	84	1	61	94	59		15	54	34		2	14	9		
133	83	5	60	93	58	1	15	53	33	1	2	13	8		
132	83	1	57	92	58	2	14	52	33		1	12	8		
131	82	2	57	91	57		13	51	32		1	11	7		
130	81	3	56	90	56	2	13	50	31	1	1	10	6		
129	81	3	54	89	56	1	12	49	31	1	1	9	6		
128	80	1	52	88	55	1	11	48	30			8	5		
127	79	2	52	87	54		11	47	29			7	4		
126	79	4	51	86	54		11	46	29			6	4		
125	78	3	48	85	53		11	45	28			5	3		
124	78	2	47	84	53		11	44	28			4	3		
123	77	5	46	83	52	1	11	43	27			3	2		
122	76	5	43	82	51		10	42	26			2	1		
121	76	3	40	81	51		10	41	26			1	1		

AVERAGE NUMBER CORRECT = 121.9 STANDARD DEVIATION = 24.1 AVERAGE PERCENT CORRECT = .76

ITEM RESPONSE BY OBJECTIVE
DELAWARE EDUCATIONAL ASSESSMENT PROGRAM
GRADE 4 COMMUNICATIONS 1977

ISTRICT - WAREDEL

SCHOOL - EXCELLENT ELEM. SCHOOL CLASS - 1
NUMBER OF STUDENTS = 24

STRAND A - STUDY SKILLS

ITEM NUMBER	CORRECT ANSWER	PERCENT CORRECT	DISTRIBUTION OF RESPONSES (% OF STUDENTS) NR	A	B	C	D
OBJECTIVE A1 - UTILIZE ALPHABETIZING SKILLS							
89	A	96	0	96	4	0	0
90	D	88	0	0	0	13	88
91	C	83	0	8	8	83	0
92	A	88	0	88	0	4	8
OBJECTIVE AVERAGE = 89							
OBJECTIVE A2 - UTILIZE DICTIONARY SKILLS							
93	B	67	0	0	67	21	13
94	C	79	0	13	0	79	8
95	C	79	0	4	8	79	8
96	A	96	0	96	4	0	0
OBJECTIVE AVERAGE = 80							
OBJECTIVE A3 - FOLLOW PRINTED DIRECTIONS							
97	A	67	0	67	17	4	13
98	B	92	0	0	92	8	0
99	C	71	0	0	29	71	0
OBJECTIVE AVERAGE = 76							
OBJECTIVE A4 - BASIC BOOK SKILLS							
100	D	42	0	29	29	0	42
101	A	67	0	67	0	29	4
102	C	96	0	0	0	96	4
103	D	54	0	17	4	25	54
104	B	100	0	0	100	0	0
105	C	75	0	4	0	75	21
OBJECTIVE AVERAGE = 72							
OBJECTIVE A5 -USE APPROPRIATE REFERENCE MATERIAL TO FIND INFORMATION							
35	C	100	0	0	0	100	0
36	D	92	0	0	4	4	92
37	A	100	0	100	0	0	0
OBJECTIVE AVERAGE = 97							
OBJECTIVE A6 - INTERPRET SYMBOLS ON MAPS, CHARTS, GRAPHS, ETC.							
38	A	96	0	96	0	4	0
39	B	96	0	4	96	0	0
40	D	25	0	0	8	67	25
OBJECTIVE AVERAGE = 72							
OBJECTIVE A7 - UNDERSTAND THE ORGANIZATION OF A NEWSPAPER							
41	D	100	0	0	0	0	100
42	A	63	0	63	0	0	38
43	B	63	0	13	63	4	21
OBJECTIVE AVERAGE = 75							

********* STRAND AVERAGE = 80 *********

APPENDIX B

RESULTS OF DELAWARE GRADE FOUR STUDENTS
ON FORTY OBJECTIVES ASSESSED ON THE OBJECTIVE-REFERENCED
MEASURE IN COMMUNICATIONS

PRESENTED IN RANK ORDER

CODE	OBJECTIVE	AVERAGE PERCENT CORRECT
C1	USE CAPITAL LETTERS TO BEGIN PROPER NOUNS	89
E2	SIGHT VOCABULARY	82
G2	RECOGNIZE & IDENTIFY CAUSE & EFFECT RELATIONSHIPS	82
A5	USE APPROPRIATE REFERENCE MATERIAL TO FIND INFORMATION	81
G3	MAKE INFERENCES AFTER READING A SELECTION	81
C7	DETERMINE PRONOUNS BASED ON CASE, NUMBER AND GENDER	80
G5	RECOGNIZE FEELINGS AND MOTIVES OF CHARACTERS	80
A1	UTILIZE ALPHABETIZING SKILLS	79
F2	SUPPLY A MISSING HOMONYM BY UTILIZING CONTEXT CLUES	79
E5	IDENTIFY COMPOUND WORDS	77
G1	DRAW CONCLUSIONS FROM A SELECTION	77
C2	USE CAPITALIZATION OF THE PRONOUN I, ETC.	76
C9	RECOGNIZE AND ELIMINATE UNNECESSARY REPETITIONS	76
E1	CONTEXT	76
G6	PREDICT POSSIBLE OUTCOMES OF A SELECTION	76
F1	USE CONTEXT CLUES TO SELECT THE CORRECT MEANING	75
E7	IDENTIFY NEW WORDS FORMED BY VARYING ENDINGS	74
G4	MAKE VALID COMPARISONS AFTER READING A SELECTION	74
B1	KNOW SELECTED LITERARY ELEMENTS	73
F5	RECALL THE CORRECT SEQUENCE OF EVENTS	72
C5	RECOGNIZE AND USE APPROPRIATE GRAMMATICAL UNITS	70

CODE	OBJECTIVE	AVERAGE PERCENT CORRECT
F4	VERIFY ANSWERS TO LITERAL QUESTIONS	70
F3	ANSWER FACTUAL QUESTION PERTAINING TO SELECTION READ	69
C3	USE APPROPRIATE PUNCTUATION	68
C6	RECOGNIZE SUBJECT-PREDICATE AGREEMENT	67
D2	LISTEN TO MATERIAL PRESENTED ORALLY	66
F6	RECALL AND IDENTIFY THE MAIN IDEA	65
B2	UNDERSTAND USE & CHOICE OF LANGUAGE IN LITERATURE	64
E3	PHONIC ANALYSIS -- CONSONANTS	64
H1	INDICATE WHETHER STATEMENTS REPRESENT FACT OR OPINION	64
D1	FOLLOW A SET OF DIRECTIONS FOR A GIVEN TASK	63
A4	BASIC BOOK SKILLS	62
A3	FOLLOW PRINTED DIRECTIONS	59
A6	INTERPRET SYMBOLS ON MAPS, CHARTS, GRAPHS, ETC.	59
A2	UTILIZE DICTIONARY SKILLS	58
E4	PHONIC ANALYSIS -- VOWELS	58
A7	UNDERSTAND THE ORGANIZATION OF A NEWSPAPER	56
C8	COMBINE TWO RELATED THOUGHTS INTO ONE SENTENCE	54
C4	USE APPROPRIATE SPELLING	47
E6	IDENTIFY THE ROOT WORD WITH PREFIX OR SUFFIX	37